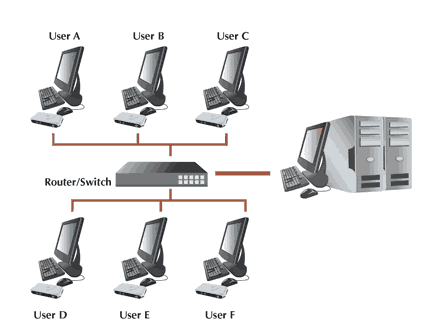
**Name: Date:**

**Task 2 - Theory Assessment**

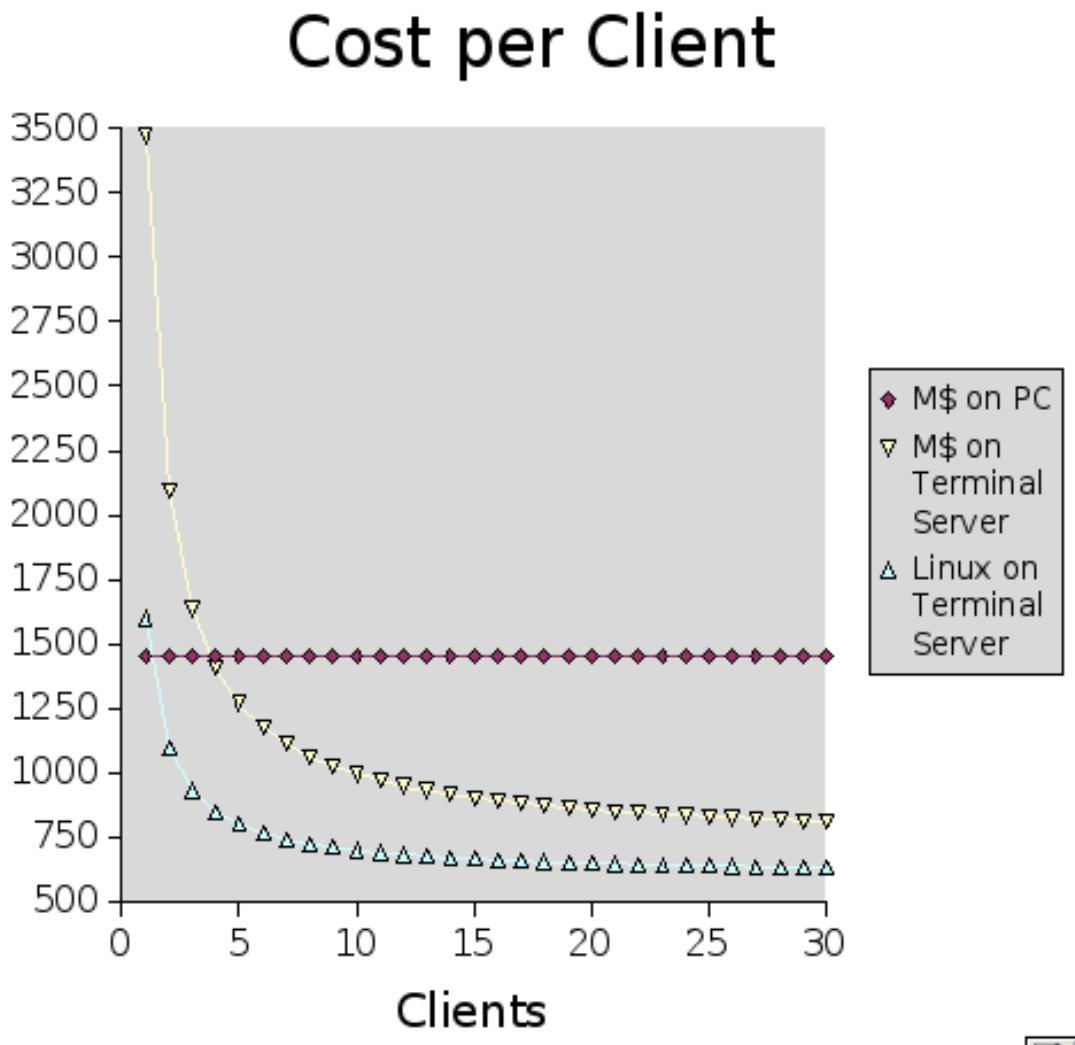
**Research and identify suitable technology solutions applicable to the project**

**Gather power consumption data on ICT equipment required for an energy audit based on an agreed standard**

**Thin Client Networks**



<http://www.ikon.is/ikon/content/view/114/52/lang,english/>



**Thin Client**

<http://en.wikipedia.org/wiki/Thin_client>

<http://www.lamarheller.com/technology/thinclient/powerstudy.pdf>

<http://net.educause.edu/ir/library/pdf/DEC0005.pdf>

A thin client (sometimes also called a lean or slim client) is a computer or a computer program which depends heavily on some other computer (its server) to fulfill its traditional computational roles. This stands in contrast to the traditional fat client, a computer designed to take on these roles by itself. The exact roles assumed by the server may vary, from providing data persistence (for example, for diskless nodes) to actual information processing on the client's behalf.

Thin clients occur as components of a broader computer infrastructure, where many clients share their computations with the same server. As such, thin client infrastructures can be viewed as the providing of some computing service via several user-interfaces.

Thin-client computing is also a way of easily maintaining computational services at a reduced total cost of ownership.

Name: Date:

**Theory (50Marks)**

Complete the following:

Questions (5 marks each)

1. Give an overview of thin client computing to your client.

ANSWER:

1. Explain the advantages of a thin client.

ANSWER:

1. Explain the disadvantages of thin client.

ANSWER:

1. Explain alternative ways to setup thin client networks in GNU/Linux

ANSWER:

1. Recommend a Linux thin client solution for a small school classroom of 16 seats (clients)

ANSWER:

1. Sketch your solution

ANSWER:

1. Detail hardware:

ANSWER:

|  |  |  |
| --- | --- | --- |
| Item | Cost | URL |
| Thin client |  |  |
| Switch |  |  |
| Server |  |  |
| Cables |  |  |
| Modem |  |  |
| **TOTAL COST** |  |  |

1. Detail software:

ANSWER:

|  |  |  |
| --- | --- | --- |
| Item | Cost | URL |
| ubuntu |  |  |
|  |  |  |
| **TOTAL COST** |  |  |

1. What is the expected performance of your solution?

ANSWER:

Client boot time:

Office apps installed:

Operational Issues:

1. Explain the sustainability merits of thin client architectures

ANSWER

Features:

Advantages:

Disadvantages:

**Practicum (50Marks)**

* **Identify power consumption of a thin client system under different operating conditions using the Current Cost EnviR Energy Monitor and appropriate power lead or similar energy meter.**
* **Recommendations on upgrading computer system.**

1. Record power consumption and notes e.g. range, variability, operating conditions:

|  |  |  |
| --- | --- | --- |
| **Condition** | **Server power consumption**  **(watts)** | **Thin Client**  **consumption**  **(watts)**  **Model:** |
| **OFF** |  |  |
| **MAX BOOT** |  |  |
| **IDLE** |  |  |
| **Wordprocessing** |  |  |
| **Spreadsheets** |  |  |
| **Web browsing**  <http://news.bbc.co.uk/2/hi/programmes/click_online/default.stm> |  |  |
| **Low level music**  [http://grooveshark.com/#/s/Fall+At+Your+Feet/3KIZB0?src=5](http://grooveshark.com/) |  |  |
| **Low level video** <http://news.bbc.co.uk/2/hi/programmes/click_online/8610962.stm> |  |  |
|  |  |  |

1. Evaluate the extent to which sustainability could be integrated into an upgrade of the computer system.

Total power draw for a 20 seat thin client system:

(Show your calculations)

Total power draw for a 20 seat PC system:

Advise your recommendations: